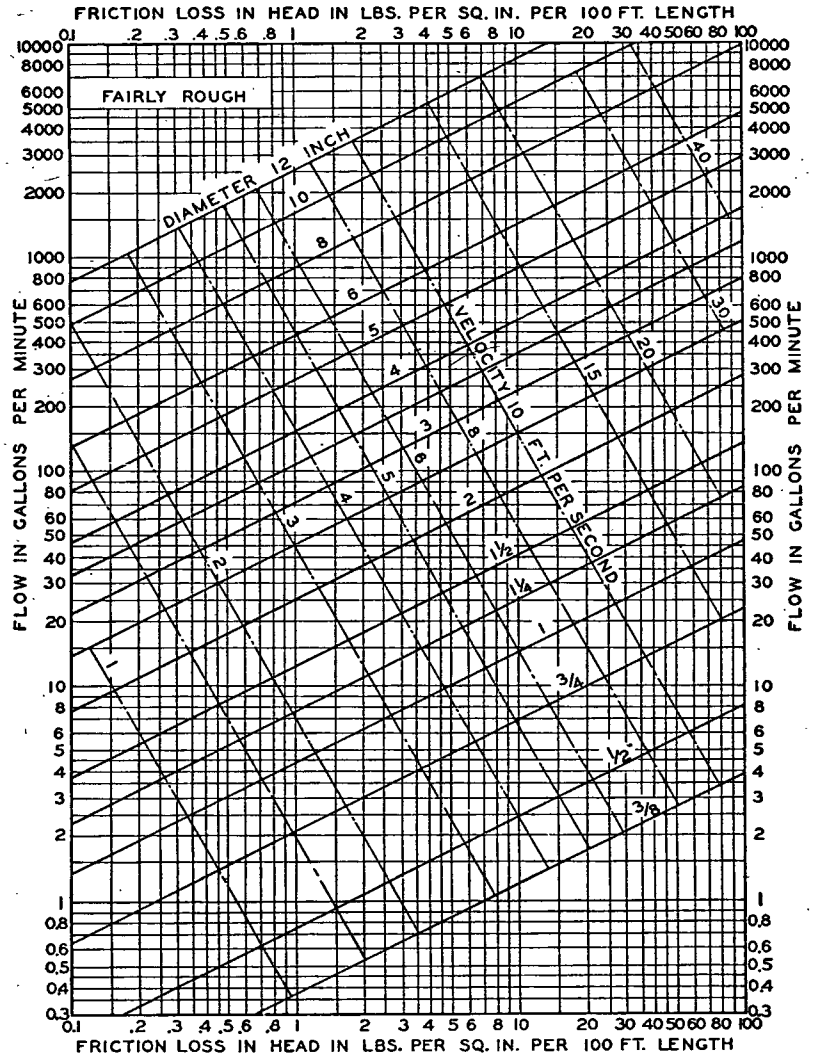

FIG. 3. FLOW CHART FOR FAIRLY ROUGH PIPE

Estimated pressure losses for pipe fittings and valves in terms of equivalent pipe length are shown in Table 3.

The pressure loss, in pounds per square inch, caused by the difference in elevation between the street main and the highest fixture may be obtained by multiplying the difference in elevation in feet by 0.43.

Example 1. Assume: a minimum street main pressure of 55 psi; a height of topmost fixture above street main of 50 ft; a developed pipe length from water main to highest fixture of 100 ft; a total load on the system 50 fixture units; and that the water closets are flush-valve operated. Find the required size of supply main.

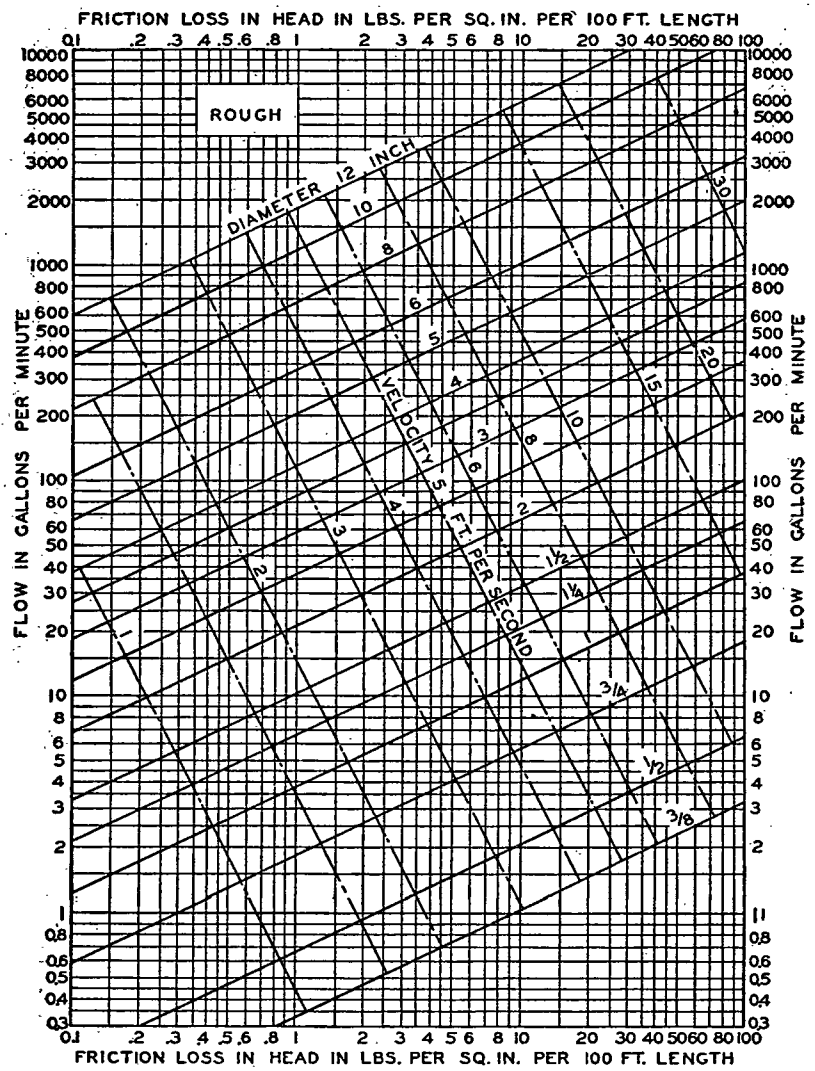

FIG. 4. FLOW CHART FOR ROUGH PIPE

From Fig. 2 the estimated peak demand is found to be 51 gpm. From Table 2 it is evident that several sizes of meters would adequately measure this flow. For a trial computation choose the 1½ in. meter. From Fig. 6 the pressure drop through a 1½ in. disc-type meter for a flow of 51 gpm is found to be 6.5 psi.

Then the pressure drop available for overcoming friction in pipes and fittings is $55 - (15 + 50 \times 0.43 + 6.5) = 12$ psi.

At this point it is necessary to make some estimate of the equivalent pipe length of the fittings on the direct line from the street main to the highest fixture. The exact equivalent length of the various fittings cannot now be determined since the pipe sizes of the building main, riser, and branch leading to the highest fixture are not known as yet, but a first approximation is necessary in order to make a tentative selection of pipe sizes.